Session 3 – Cardiovascular Multimodality Imaging Techniques

Thursday May 28 – 15.30 – 16.00

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Diagnostic value of post-systolic Index in non-ST-segment elevation acute coronary syndrome without regional wall motion abnormality

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Background Postsystolic shortening offers a sensitive marker of myocardial ischemia. We tested the ability of Post-systolic Index (PSI) by speckle tracking echocardiography to identify significant coronary stenosis in patients with non-ST-elevation acute coronary syndrome (NSTE-ACS) without regional wall motion abnormality.

Methods Thirty two patients referred to coronary angiography due to suspected non-ST-segment elevation-acute coronary syndromes (NSTE-ACS) were prospectively included. Coronary occlusion was found in 04, significant stenosis in 18, and no stenosis in 10 patients. Echocardiography was performed 1 to 2h before angiography. Patients with left ventricular dysfunction or regional wall motion abnormality were excluded. Myocardial PSIs and strains of 17 myocardial segments were measured by 2-dimensional (2D) speckle-tracking echocardiography.

Results According to ROC curve analysis (area under ROC curve=0.81), an area of ≥2adjacent dysfunctional segments (Post-systolic index greater than or equal to 20) had the best ability to identify patients with acute coronary occlusion or significant stenosis, with sensitivity 60% and specificity 96%.

Conclusion Mesurement of PSI by speckle tracking echocardiography identifies NSTE-ACS patients with acute coronary occlusion or significant stenosis, who may benefit from urgent reperfusion therapy.

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Cardiac hydatid cyst: About 110 cases

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Introduction Cardiac hydatid disease is rare. It is a potentially serious condition to its location and its complications. The natural evolution is pejorative and surgical resection remains the only alternative.

Objective Analyze the diagnostic and therapeutic aspects of the disease.

Materials and methods Retrospective descriptive study of patient records who underwent cardiac hydatid cyst surgery in a cardiac surgery center in Algiers from 1986 to December 2014.

Results 110 cases of cardiac hydatid cysts were collected. Patients aged from 6 to 72 years. Echocardiography is the gold standard preoperatively exam. The use of CT and/or cardiac MRI was reserved to the complicated forms or multiple cardiac or secondary location. The ruptured forms represent about 20% of cases with systemic or pulmonary embolic complications. Approximately 30% of cardiac locations are secondary as part of a multi visceral involvement.

The left ventricle is the site of predilection (30%). Multiple intracardiac locations are non negligible (14%).

The results of surgery are excellent with a mortality of 2.7% and a recurrence rate of 1.8% interesting ruptured cysts.

Conclusion Cardiac hydatid is rare but serious disease. It must be systematically searched in the cases of any extracardiac location. Echocardiography is the gold standard preoperatively exam in the incomplicated forms.

Surgery remains the only therapeutic alternative with good short and long term results.

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Accuracy and limits of multi-detector computed tomography coronary (MDCT) in the detection of coronary artery disease (about 105 cases)

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Introduction Non-invasive examination of coronary artery disease is an attractive and rapidly evolving possibility. Multi-detector computed tomography coronary (MDCT) is currently considered as a promising technique alternative to conventional coronary angiography (CCA).

Purpose The purpose of our study is to determine diagnostic accuracy and limits of 64-slice MDCT in the detection of coronary artery disease (CAD).

Methods 105 patients underwent 64-slice MDCT. Coronary angiography was performed every time when the MDCT was pathologic. In two cases the MDCT was realized in complement of inconclusive coronary angiography.

Study of coronary arteries was based on "per-segment" and "per-patients" analyse and we proceeded to calculate sensitivity, specificity, positive and negative predictive value

Results The mean age was 63.3 years, sex ratio was 0.7. Hypertension was noted in 63% of cases, 29.9% of patients had mellitus diabetes.

The initial clinical presentation was unusual chest pain in 46 patients, exercise chest pain in 40 cases. the MDCT was done for the detection of silent ischemia In 5 cases, for screening of CAD in patients with dilated cardiomyopathy in 5 cases, before cardiac surgery in 3 case and before non cardiac surgery in 2 cases. MDCT was normal in 30 patients (28%) so coronary angiography was avoided in 60% of patients with unusual chest pain, and in 50% of patients with dilated cardiomyopathy and in also in 50% of patients selected for cardiac or non cardiac surgery.

In per-segment study the sensitivity, specificity, positive and negative predictive value of the MDCT in detecting coronary stenosis were respectively 89%,98%, 91% and 97% versus, 98%, 89%, 94%, 95% the per-patient evaluation.

The MDCT as inclusive because in10 patients. of calcifications in 8 cases and because uncontrolled cardiac heart

Conclusion Our results for negative predictive value of MDCT are similar to reports from the literature. This suggests that in this clinical setting MDCT may replace coronary angiography. In patients with low probability of coronary artery diseases, its is also useful for assessment of cardiomyopathy and before cardiac or non cardiac surgery.

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Coronary calcification does not affect the systolic function of the left ventricle in chronic hemodialysis

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Introduction Cardiovascular disease is the first leading cause of death in hemodialysis patients. In this population, cardiovascular calcifications